

PROPYLENE DIENE COPOLYMERIZED POLYMERS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of application Serial No. 09/458,918, filed December 10, 1999. ²⁰⁰⁹
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FIELD OF INVENTION

[0002] The present invention relates to methods of propylene polymerization. More particularly the invention relates to methods of copolymerizing propylene and diene monomers.

BACKGROUND OF THE INVENTION

[0003] Polypropylene is an inexpensive thermoplastic polymer employed in a wide variety of applications, the articles of which include, for example, films, fibers, such as spunbonded and meltblown fibers, fabrics, such as nonwoven fabrics, and molded articles. The selection of polypropylene for any one particular application depends, in part, on the properties of the polypropylene polymer candidate, the fabrication mode or manufacturing process and the final article and its intended uses. Examples of some of these properties include density, molecular weight, molecular weight distribution, melting temperature, and melt flow rate.

[0004] The final properties of polypropylene are generally dependent upon the polymerization conditions present during polymer formation. One such polymerization condition is the catalyst. In some instances, while the catalyst selection is an important component in the polymerization reaction, changing other polymerization condition variables in the presence of the same catalyst may produce polypropylenes having different final properties. For example, the addition of hydrogen to a metallocene catalyzed polymerization reaction may increase the catalyst activity. Catalyst activity may be measured by the increase or decrease in the amount of polymer produced during a measured time interval by a measured amount of catalyst. Generally, an increase in catalyst activity results in an increase in the amount of polymer produced by the catalyst over a measured